

Report from the LNL and LNS PAC (ENSAR meeting, Amsterdam October 2012)



LNL: May, 2012
First meeting of the PAC in the
new composition

D. Ackermann	GSI
B. Back	Argonne
G. Colo'	Milano
A. Del Zoppo*	LNS
S. Lunardi	Padova (Chair)
O. Sorlin	GANIL
R. Wadsworth*	York

* Members also of the previous PAC

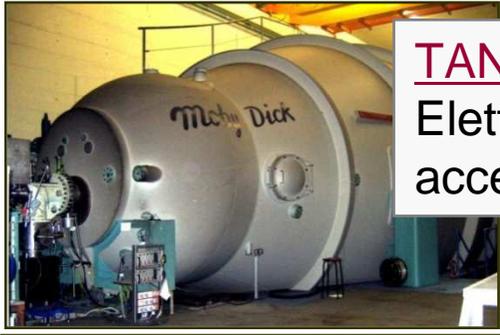


LNS: Meeting in June 2012

R. Bougault	Caen (Chair)
P. Descouvemont	Bruxelles
M. J. Borge	Madrid
F. Gramegna	LNL
A. Kacperek	Clatterbridge Hospital (UK)
P. Roussel-Chomaz	GANIL
R. Tribble	Texas

Legnaro accelerators

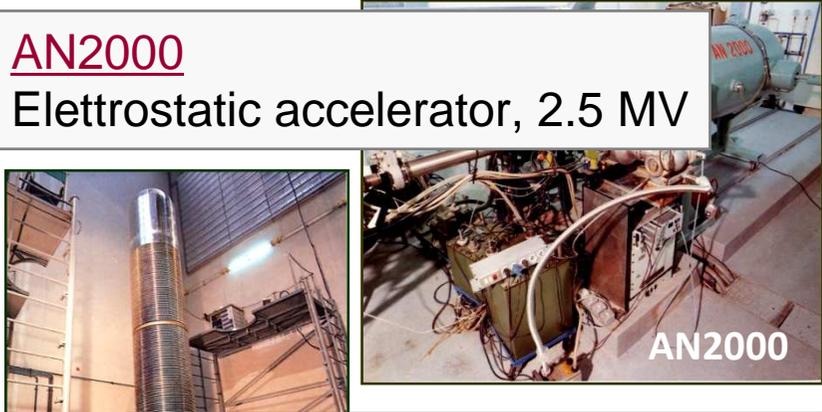
LNL



TANDEM-XTU
Elettrostatic
accelerator, 15 MV



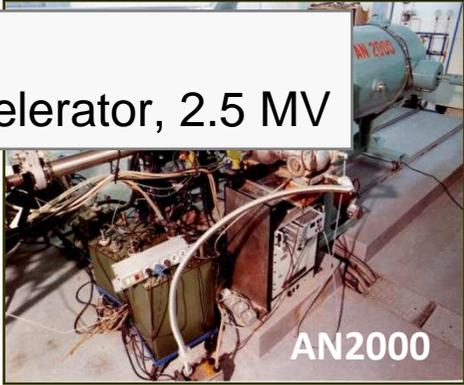
ALPI
Linear superconducting
accelerator. Injection
from Tandem or ECR
source and PIAVE



AN2000
Elettrostatic accelerator, 2.5 MV



CN
Elettrostatic accelerator, 7 MV



AN2000

Mainly used for fundamental heavy-ions nuclear physics experiments
(discussed and approved by the Nuclear Physics PAC)

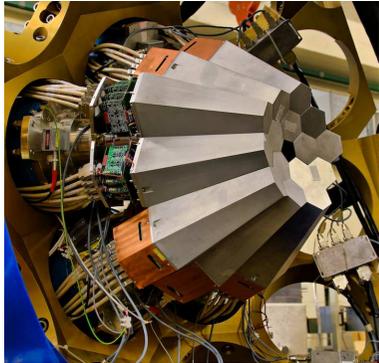
Part of the beam time also to applied physics experiments (the beam time division between nuclear and applied physics experiments is decided by the Lab. Director)

Mainly used for interdisciplinary research, applied physics, solid state physics, neutron physics research and advanced educational purposes.

The interdisciplinary, applied physics experiments are discussed and approved by a dedicated PAC

The PAC meeting is held usually twice a year

- in 2012 only one meeting (May 3-4) because of the long accelerators maintenance after the conclusion of the AGATA campaign



~ 50% of the total beam time at the Tandem/PIAVE-ALPI in 2011

- next meeting will be in January 2013
- before the meeting, each proposal is assigned to two members of the PAC for a more detailed analysis
- at the meetings each proposal is presented orally (10 minutes + 5 discussion) by the spokesperson
- in the closed PAC meeting, there is an open discussion of each proposal which, at the end, is ranked individually by each member to obtain the final global ranking
- the criteria for ranking are strictly based on scientific merits and on the feasibility of the experiment. Attention is given also on results and publications from past experiments

3-4 May PAC meeting

(to allocate the beam time for the period mid June 2012- February 2013)

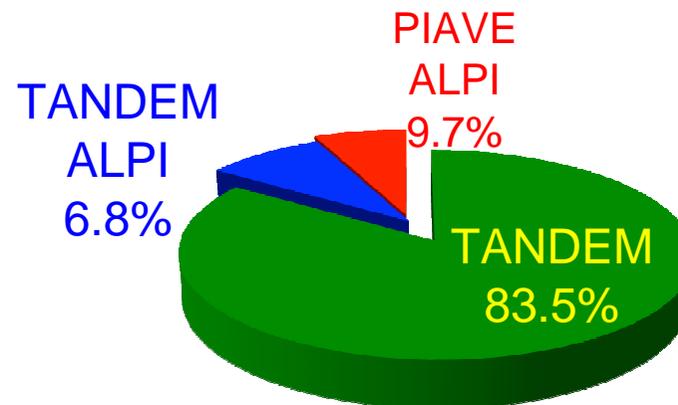
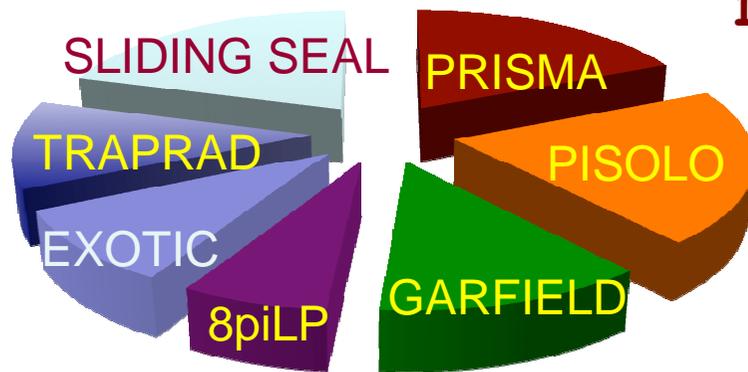
A large gamma-ray spectrometer (GASP, EUROBALL, CLARA, AGATA demonstrator) was available at Legnaro since 1992, attracting many users worldwide. The amount of beam time taken by such arrays at the Tandem-ALPI accelerator was ranging from 40% to 60%. The new project in this field, GALILEO, will be available at the end of 2013



No proposals of nuclear structure via gamma-ray spectroscopy at this PAC meeting

All proposals were therefore mainly in the field of nuclear reaction mechanism (transfer reactions, sub-barrier fusion, hot nuclei, clustering in nuclei, etc..)

**Beam time request for Nuclear Physics:
103 days (13 proposals) + one LOI**



Total number of proposals : 26
Number of PAC proposals : 13
USIP proposals : 13
Total requested PAC days : 103 (70%)
USIP days : 43 (30%)

LNL

Total time available for experiments	124 days
Carry over:	2 days (2%)
Time allocated to new proposals (NP):	77 days (62%)
Time allocated for Applied Physics (other committee) :	35 days (28%)

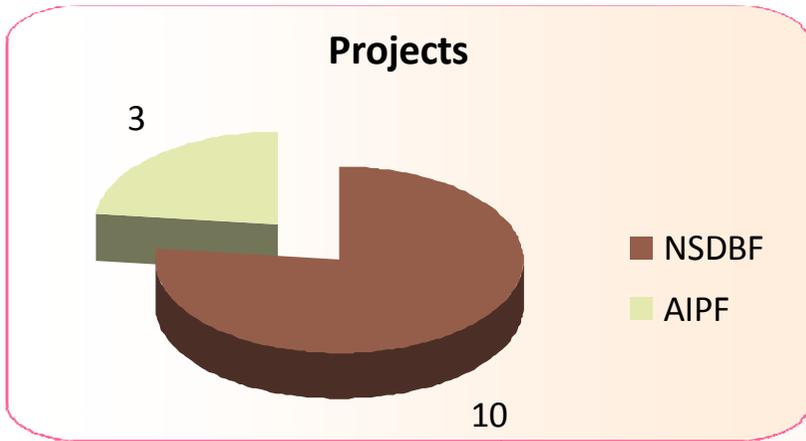
the 13 NP experiments : 8 approved for the total amount of beam time
3 approved with reduced beam time
2 not approved

Equipment of other labs.?

- AGATA detectors now at GSI
- Euroball clusters will be used in GALILEO
- GASP detectors and associated electronics at ILL Grenoble for the EXILL campaign
- LaBr₃ detectors from IRB Zagreb to be used with PRISMA

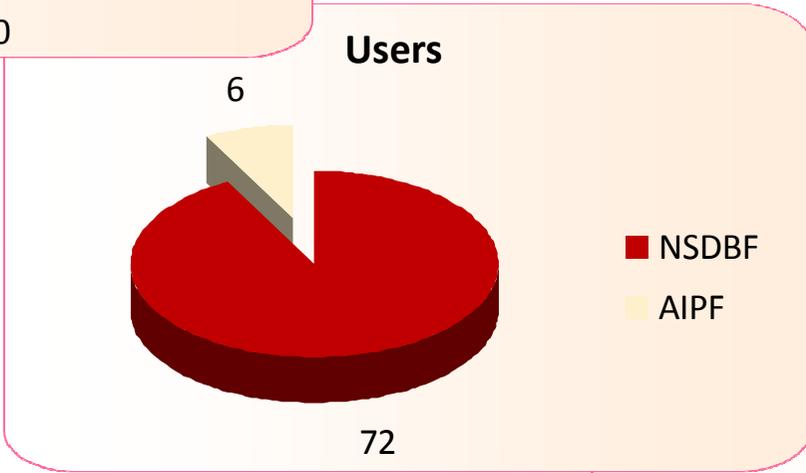
TNA03 - Activity at LNL up to July 2012

LNL



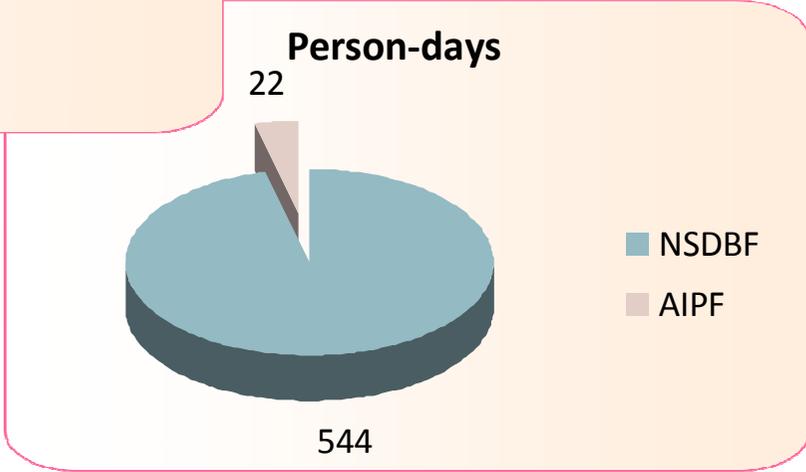
28 projects / 4y

124 users / 4y



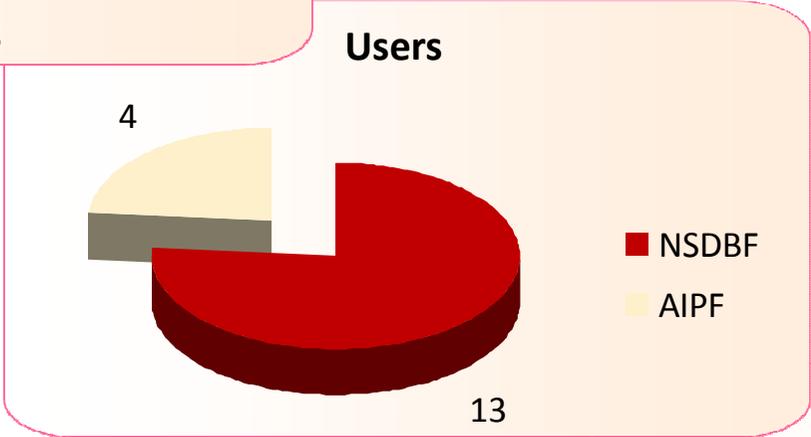
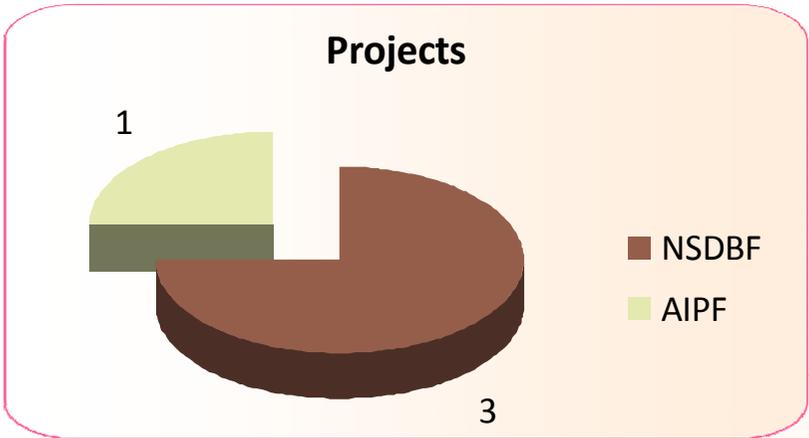
30 new users
29 @ NSDBF , 1 @AIPF

1104 person-days / 4y

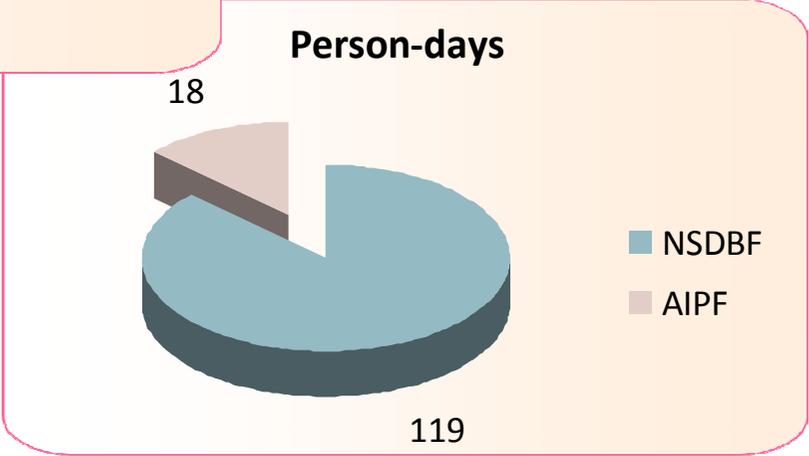


TNA03 - To be performed at LNL by February 2013

LNL



7 new users
3 @ NSDBF , 4 @AIPF

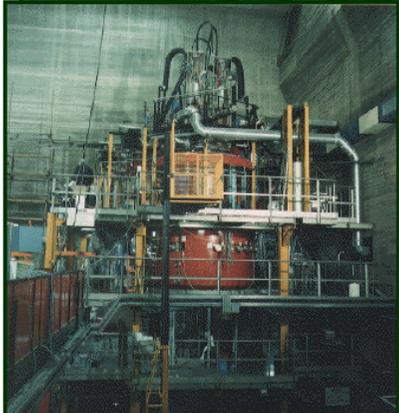


LNS (Catania) accelerators

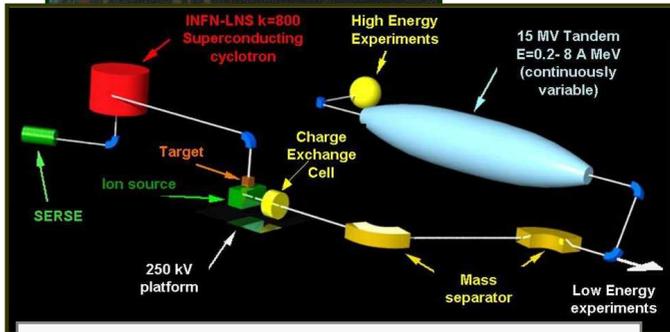
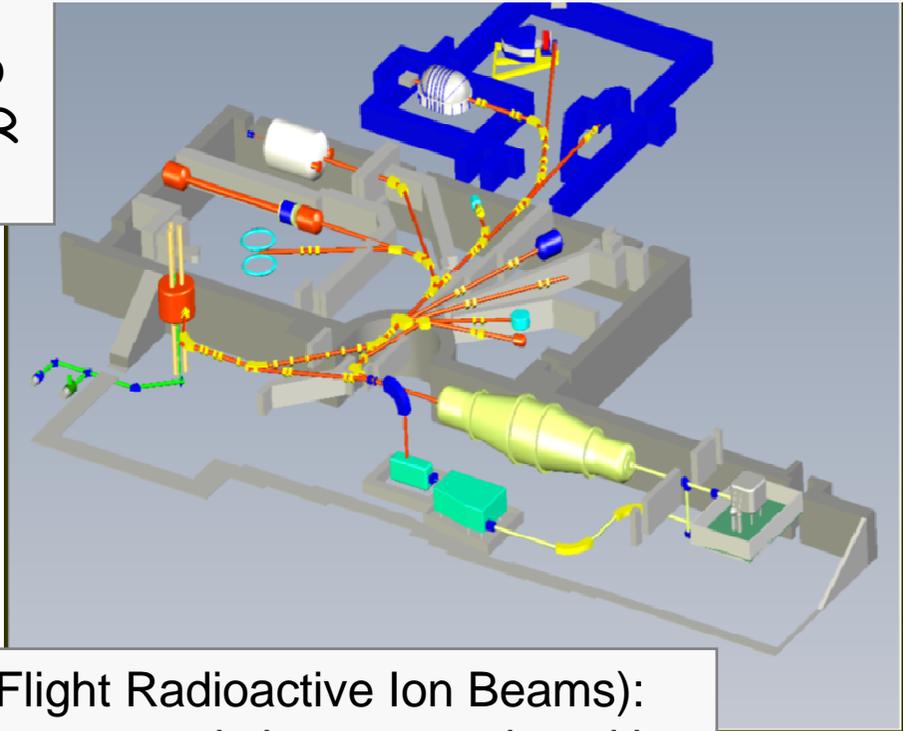
Mainly used for fundamental heavy-ions nuclear physics experiments, interdisciplinary research, solid state physics, radiobiology, applied physics and proton therapy (K800 62 MeV proton, ~300 patients total - choroidal melanoma)



TANDEM Electrostatic accelerator, 15 MV



K800: superconducting cyclotron. Energy up to 80 MeV/AMU. Two ECR sources.



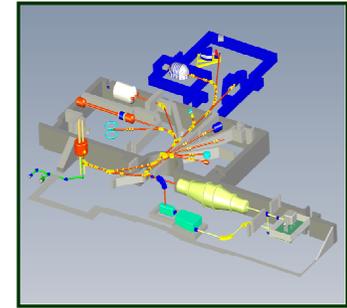
EXCYT light exotic beams (0.2 up to 8 MeV/AMU).

FRIBS (in Flight Radioactive Ion Beams): Light and heavy exotic beams produced by projectile fragmentation of stable beams accelerated by the LNS-Cyclotron.

One PAC for both Nuclear Physics and applied physics experiments.

Dedicated BTU for proton therapy

Dedicated BTU industrial appli. (€)



- At the PAC meetings (1 per year) each proposal is presented orally by the spoke-person and ranked individually by each member to obtain the final global ranking in a closed session.

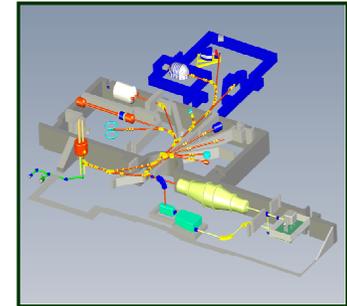
Up to now, a consensus was obtained to rank the proposals A, B or C.

- Criteria for the ranking are strictly based on scientific merits (and of course on the feasibility of the experiment)

- Production (articles) of past experiments is also taken into account

2010: (3 months stop for upgrading FRIBS@LNS)

- Superconducting Cyclotron: 246 BTU
- Superconducting Cyclotron (extra-medical & industry): 78 BTU
- Tandem: 213 BTU



2011:

- Superconducting Cyclotron: 371 BTU
- Superconducting Cyclotron (extra-medical & industry): 103 BTU
- Tandem: 226 BTU (belt problem October-December)

2012:

- Superconducting Cyclotron: 257 BTU (+ 137 scheduled)
- Superconducting Cyclotron (extra-medical & industry): 95 BTU (+ 56 scheduled)
- Tandem: 0 BTU (belt problem)

Cyclotron beams with no back-log from previous allocations.

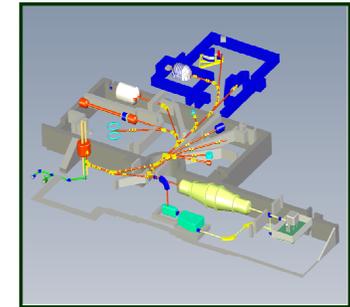
The Tandem experiments approved in 2011 in the previous PAC meeting, to be performed in 2012, are postponed.

No new Tandem call will be sent until the recovery of the operating conditions.

LNS

Last PAC (June 2012) beam allocation:

- Demand/Available: pressure factor of 1.6
- Allocated:
 - Nuclear Physics: ~70% (Tandem not available)
 - Radiobiology experiments, tests radiation, other interdisc. exp.: ~30%



Average beam allocation (2009-2011)

- *Nuclear physics, detector development, etc.* ~75 %
- *Radiobiology experiments + Protontherapy* ~10 %
- *Other interdisciplinary experiments* ~15 %

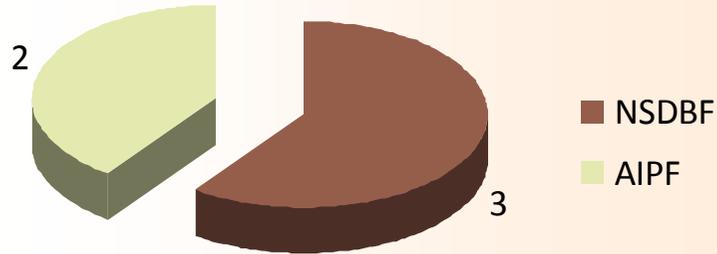
Equipment of other labs.:

- EDEN (neutron-detectors) from Orsay coupled with MAGNEX (spectrometer).
- Transfer of part of CHIMERA multi detectors to GSI for Nuclear Equation Of State Symmetry Energy density dependence measurement.

TNA03 - Activity at LNS up to July 2012

LNS

Projects



24 projects / 4y

80 users / 4y

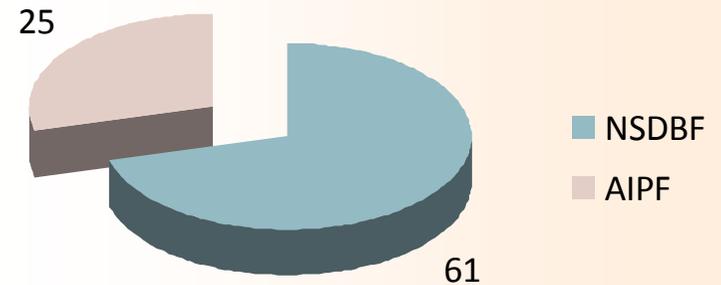
Users



6 new users

5 @ NSDBF , 1 @ AIPF

Person-days

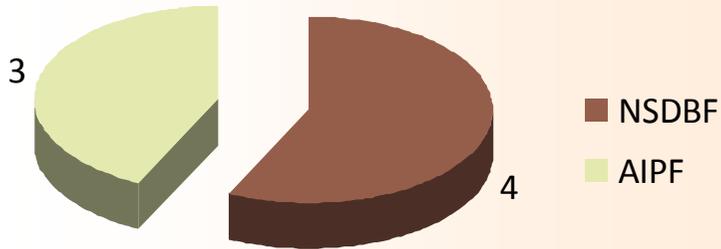


712 person-days / 4y

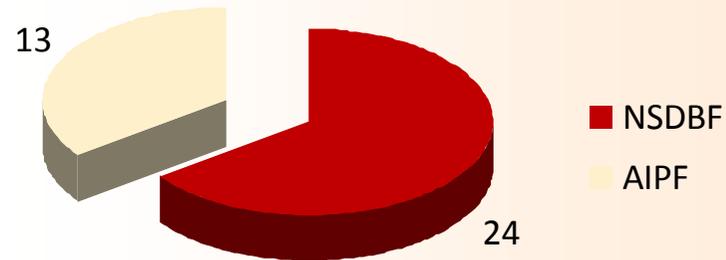
TNA03 - To be performed at LNS by July 2013

LNS

Projects



Users



13 new users
10 @ NSDBF , 3 @AIPF

Person-days

